



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,982	12/17/2001	William Joseph Armstrong	ROC920010097US1	4230

26517 7590 03/17/2006

WOOD, HERRON & EVANS, L.L.P. (IBM)
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER

TO, JENNIFER N

ART UNIT PAPER NUMBER

2195

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,982

Applicant(s)

ARMSTRONG ET AL.

Examiner

Jennifer N. To

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-38 are pending for examination.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. The language of claims 1-38 raises a question as to whether the claim is directed merely to an abstract idea that is not result in a practical application producing a useful, concrete, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. For example, the claims limitation recited the matter of collected data, and stored them. There is nowhere in the claims that shown the collected data being used. Therefore they are not produced any useful result to form a basic statutory subject matter under 35 U.S.C. 101 for a practical application.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter in which the applicant regards as his invention.

Art Unit: 2195

6. Claims 4-5, 8, 10-12, 14-15, 24, 27, 29, 35-36, and 33-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following terms lacks antecedent basis:

i. the lock – claims 14, and 33;

b. The claim language in the following claims is not clearly understood:

i. as per claims 4, and 24, it is not clearly understood what is meant by “determining the resource” and how is performed (i.e. based on what standard or criteria to determine, and what has been determined for the resource (the status active/inactive, or use/available, or lock/unlock)).

ii. as per claims 8, and 27, it is not clearly understood what is meant by “reassigning the identifier to a second resource” (i.e. what/where is the first resource).

iii. as per claims 10, and 29, it is not clearly understood what is meant by “detecting a locking occurrence” (i.e. detecting a locking occurrence for the resource or the thread).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4-5, 18, 21-22, 24, and 37-38 are rejected under 35 U.S.C. 102(e) as being anticipated by McLeod (U.S. Patent No. 5450592).

4. As per claim 1, McLeod teaches the invention as claim including a method of analyzing program execution within an operating system of a multithreaded environment (abstract, lines 1-10; col. 1, lines 8-9), comprising:

accumulating diagnostic data pertaining to a thread accessing a resource, the execution of a thread being predicated upon the thread's access to the resource within the multithreaded environment (fig. 1; abstract, lines 1-5; col. 2, lines 64-68; col. 3, lines 1-20; col. 6, line 47); and

storing the diagnostic data within a data structure at a location in the data structure correlated to the resource (abstract, lines 5-6; col. 2, lines 11-36; col. 3, lines 42-44; col. 6, lines 49-50).

Art Unit: 2195

5. As per claim 2, McLeod teaches that wherein the diagnostic data includes data selected from at least one of: a time measurement, program code executed by the thread, an invocation stack, and pointer data (fig. 2; col. 3, lines 7-60).
6. As per claim 4, McLeod further teaches determining the resource (fig. 2; col. 4, lines 9-50).
7. As per claim 5, McLeod teaches that wherein determining the resource includes reading the contents of a task dispatcher (fig. 3; col. 3, lines 7-20).
8. As per claim 18, it is rejected for the same reason as claim 1 above.
9. As per claims 21-22, 24, and 37-38, they are rejected for the same reasons as claims 1-2, 4-5, and 18 above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 6-9, 23, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLeod (U.S. Patent No. 5450592), as applied in claim 1

Art Unit: 2195

above, and in view of Agesen et al. (hereafter Agesen) (U.S. Patent No. 6314563).

12. As per claim 3, McLeod teaches the invention substantially as claimed in claim 1. McLeod did not specifically teach the data structure comprise a hash bucket.

13. However, Agesen teaches the data structure comprise a hash bucket (figs. 7A-K; col. 11, lines 12-62).

14. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of McLeod and Agesen because Agesen teaching of data structure comprises a hash bucket would improve the integrity of McLeod's system by providing a data structure for limiting storage space cost during the process of locking and unlocking object in a multithread environment (Agesen, abstract; col. 7, lines 40-46).

15. As per claim 6, Agesen teaches storing information identifying the resource (col. 12, lines 44-63).

16. As per claim 7, McLeod teaches the invention substantially as claimed in claim 1. McLeod did not specifically teach matching an identifier corresponds to the resource to a correlative identifier corresponding to the data structure.

Art Unit: 2195

17. However, Agesen teaches matching an identifier corresponds to the resource to a correlative identifier corresponding to the data structure (col. 23, lines 8-29).

18. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of McLeod and Agesen because Agesen teaching of matching an identifier correspond to the resource to a correlative identifier corresponding to the data structure would improve the integrity of McLeod's system by providing a method for limiting storage space cost during the process of locking and unlocking object in a multithread environment (Agesen, abstract; col. 7, lines 40-46).

19. As per claim 8, Agesen teaches reassigning the identifier to a second resource (col. 23, lines 34-61).

20. As per claim 9, Agesen teaches assigning the correlative identifier to the data structure (col. 23, lines 20-45).

21. As per claims 23, and 25-28, they are rejected for the same reasons as claims 3, and 6-9 above.

22. Claims 10, 13-17, 29, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLeod (U.S. Patent No. 5450592), as applied in claim

Art Unit: 2195

1 above, and in view of Connelly et al. (hereafter Connelly) (U.S. Patent No. 5706515).

23. As per claim 10, McLeod teaches the invention substantially as claimed in claim 1. McLeod did not specifically teach detecting a locking occurrence.

24. However, Connelly teaches detecting a locking occurrence (abstract).

25. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of McLeod and Connelly because Connelly teaching of detecting a locking occurrence would improve the integrity of McLeod's system by providing a monitor procedure to support multithreads execution in a shared address space (Connelly, abstract).

26. As per claim 13, Connelly teaches recording the time corresponding to the locking occurrence (fig. 6; col. 6, lines 10-34).

27. As per claims 14-15, McLeod teaches the invention as claimed in claim 1. McLeod did not specifically teach detecting a removal of the lock, and recording a time instance corresponding to the removal of the lock.

Art Unit: 2195

28. However, Connelly teaches detecting a removal of the lock, and recording a time instance corresponding to the removal of the lock (fig. 7; table 1; col. 6, lines 10-37; col. 7, lines 1-31; col. 8, lines 1-20).

29. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of McLeod and Connelly because Connelly teaching of detecting a removal of the lock, and recording a time instance corresponding to the removal of the lock would improve the integrity of McLeod's system by providing a monitor procedure to support multithreads execution in a shared address space (Connelly, abstract).

30. As per claims 16-17, Connelly teaches recording program data relating to code executed by the thread prior to the locking occurrence, and retrieving the program data from an invocation stack (fig. 6; col. 6, lines 21-63).

31. As per claims 29, and 32-36, they are rejected for the same reasons as claims 10, and 13-17 above.

Allowable Subject Matter

32. Claims 11-12, 30-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and 35 U.S.C. 101, set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 2195

33. Claims 19-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

Response to Arguments

34. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer N. To whose telephone number is (571) 272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

36. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

37. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

Art Unit: 2195

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer N. To
Examiner
Art Unit 2195


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100